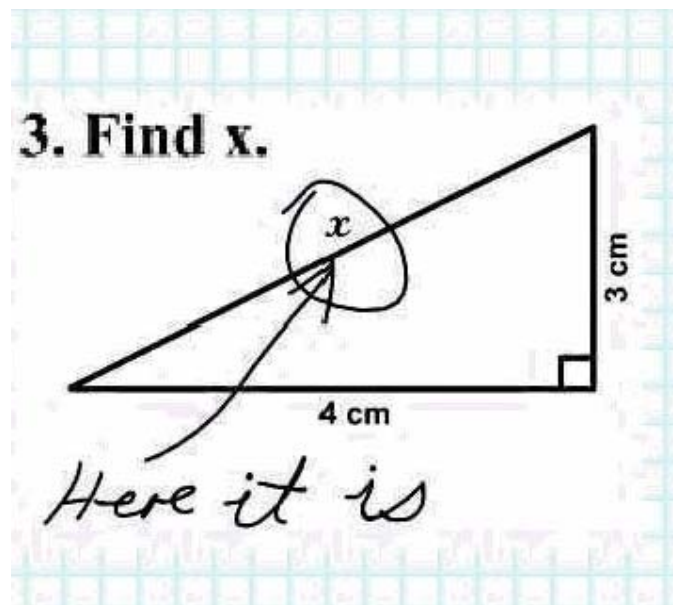


# IT Applications

## Exam Preparation Session



*At least this guy can tell his kids he is a funny failure*

Presenter Rob Mercer

# Practice Questions

## Section A - Multiple Choice Questions

### Question 1

A technician locks the door to server room and uses fingerprint recognition to access the server.

This security is an example of

- A. physical and biometric.
- B. electronic and physical.**
- C. biometric and biometric.
- D. electronic and electronic.

### Question 2 \*optional

I37								
	A	B	C	D	E	F	G	H
1	Item	Price	Quantity	Price		Delivery	\$ 10.00	
2	Monkey	\$ 2,000.00	20	\$ 40,010.00				
3	Donkey	\$ 150.00	44					
4	Cat	\$ 2.00	5					
5	Frog	\$ 20.00	100					
6								
7								
8		Total Price						
9								
10								

The formula =COUNT(A3:A9) in cell A9 will return

- A. 5
- B. 4
- C. #####
- D. 3**

### Question 3

In a travel agency there are 8 embedded computers that connect to a server 25 metres away. Some of the information being sent to the server such as credit details are confidential

The most suitable transmission media would be:

- A. wireless.
- B. Fibre optic.
- C. USB (Universal Serial Bus).
- D. UTP (Unshielded Twisted Pair).**

**Question 4**

The most appropriate data type for the field in a database storing ID Numbers such as 2008-123 would be:

- A. text.
- B. date/time
- C. number.
- D. autonumber

**Question 5**

The owner of a fast food chain wants to change his business to have a greater social responsibility.

This is an example of:

- A. a goal at a strategic level of decision making
- B. a mission statement at a strategic level of decision making
- C. a mission statement at tactical level of decision making
- D. a goal at a tactical level of decision making

**Question 6**

You are designing a tool to allow users to calculate GST on purchases (shown below). Users enter the “Amount including GST” then the tool calculates the amount of GST to withhold and the “Funding Amount excluding GST”.

The screenshot shows a spreadsheet interface for a GST Calculator. The title is "How to Use the GST Calculator". The instructions are:

1. Input the GST Inclusive figure in the box.
2. The GST that is included will be shown in the red box.
3. The amount excluding GST will be shown in the blue box. This is the figure you should use in your annual budget.

The calculator itself has three input/output fields:

GST Calculator	
Amount including GST	\$ 6.21
GST to withhold	\$ 0.56
Funding Amount excluding GST	\$ 5.65

In order to ensure the tool is accurate you need to perform some validation and testing.

The most accurate way to describe the validation and testing that needs to be performed would be:

- A. E11 needs to be validated and E13 and E15 need to be tested for accuracy
- B. E11 needs to be tested and E13 and E15 need to be validated for accuracy
- C. E11 and E15 need to be validated and E15 needs to tested for accuracy
- D. E11 and E15 need to be tested and E15 needs to validated for accuracy

**Question 7**

The efficiency of a new database system used by a business could be best evaluated by:

- A. Checking to see if there are less inaccuracies in the system
- B. Checking to see if the system is more complete than the last one
- C. Checking to see if the system is better presented than the last one
- D. Checking to see if there is a cost saving in the new system

**Question 8**

A mining company hires an Engineer who has to download a lot of large files from the company's server.

The most appropriate transmission media for the connection to the server would be:

- A. Wireless
- B. CAT5 – unshielded twisted pair**
- C. Coaxial cable
- D. Infrared

**Question 9**

Sony wants to increase their market share of the Playstation to 30% of the game over the next 2 years.

This is an example of:

- A. an organisational goal at the tactical level of decision making.
- B. an organisational goal at the strategic level of decision making.**
- C. an organisational objective at the tactical level of decision making.
- D. an organisational objective at the strategic level of decision making.

**Section B – Short Answer Questions****Question 1**

A bank user logs onto the bank website using a secure site, the site employs a method of encryption to ensure security. What is the difference between the Public Key and the Private key in encryption? Would the bank user be using the public or the private key? (3 Marks)

The Public Key is an algorithm that is accessible by everyone. This serves to encrypt the data before it is sent over the Internet. Everyone has access to this key. The private key serves to decrypt the data that was encrypted by the Public Key. Only the Private Key can decrypt what was originally encrypted by the Public Key. The bank user would use the Public Key of course.

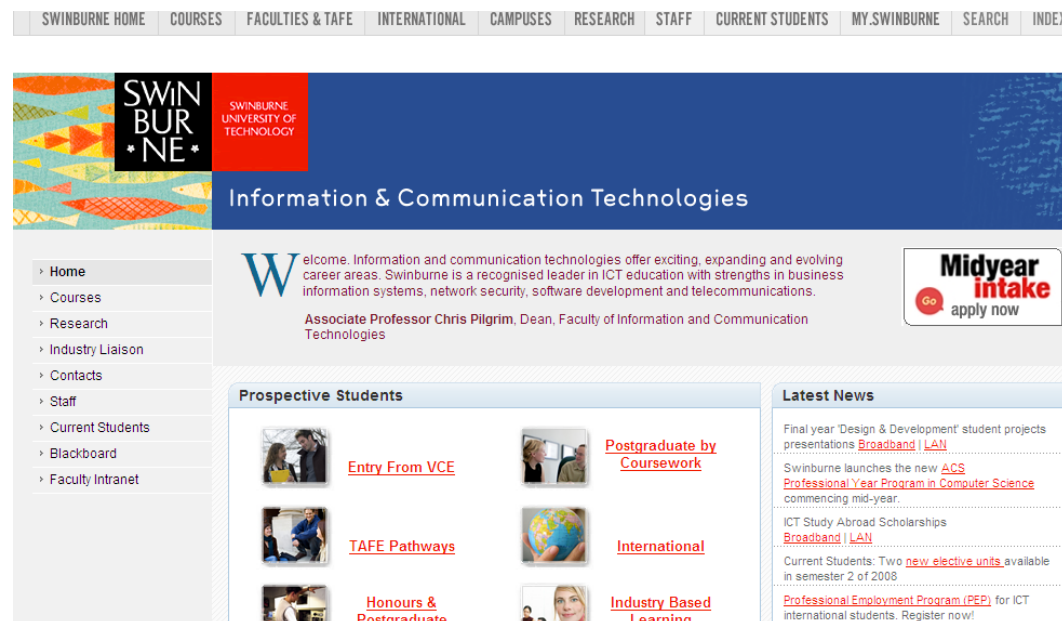
**Question 2**

Fred's School of Music uses Peer to Peer network architecture. List an advantage and a disadvantage of this choice? (2 marks)

An advantage of Fred using Peer to Peer networking is that it will be cheaper to set up as there is no need for an expensive server. However this means that there might be security issues as there is no central monitor for threatening activity.

**Question 3**

Describe one design element used to present Swinburne's information and explain how this design element helps to achieve the purpose of the website. (3 marks)



**Clarity/Consistency:** The use of the navigation buttons on the left hand side of the screen and the top of the page mean that users will always be able to find them as they navigate to different parts of the site.

**Proportion:** The heading at the top of the page is larger and hence stands out more.

*Also could have said:*

**Orientation:** The juxtaposition of the different screen elements such as the navigation, prospective students, general information and latest news allow the user to easily understand what the different elements of the page are.

**Colour/Contrast:** The contrast of the heading of dark on light emphasises it. The choice of colours on the site ensure readability and balanced use of White Space and text make the page visually appealing.

#### Question 4

You have recommended updating the CSS for the company you work for. What design tool would you use to help you with the design? Explain why you would use that design tool. (3 marks)

**Story Board** – A story board would be a good choice in this instance as it would allow you to visually problem solve anything about the general design of the various pages. You would be able to see how graphics, text and screen dimensions will effect the page before you apply the new CSS to them.

#### Question 5

What location you would you store your archived records? Explain why you would store them there. (3 marks)

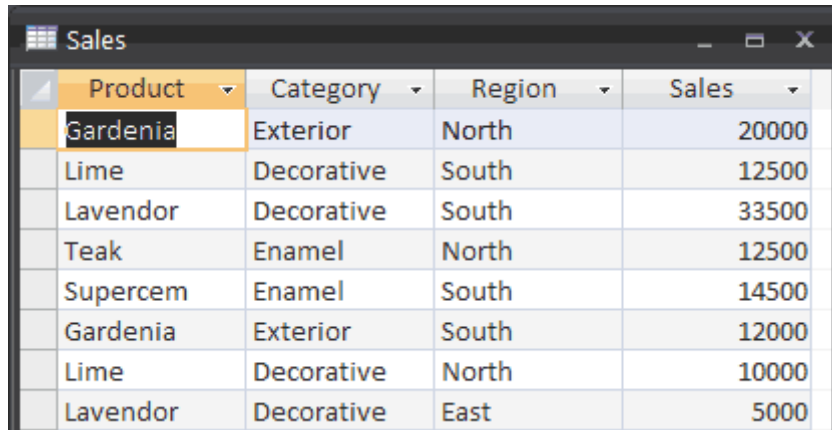
I would choose an off-site location at least 10 Kms away. I would choose this location as it would protect my files from the danger of Natural Disaster like flood, fire and earthquake. It would also ensure some protection against theft from the work site.

**Question 6**

You decide to use an incremental backup schedule list one advantage and one disadvantage of this method. (2 marks)

An advantage of an incremental backup would be that it is fast to perform the backup.

The disadvantage would be that it is slower to perform a restore as you have your data usually spread across several disks.

**Question 7**

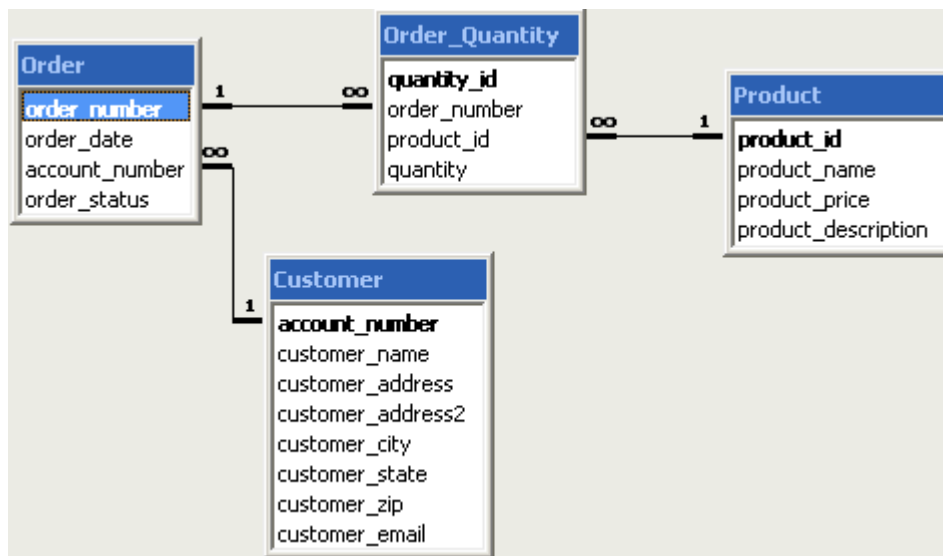
Product	Category	Region	Sales
Gardenia	Exterior	North	20000
Lime	Decorative	South	12500
Lavendor	Decorative	South	33500
Teak	Enamel	North	12500
Supercem	Enamel	South	14500
Gardenia	Exterior	South	12000
Lime	Decorative	North	10000
Lavendor	Decorative	East	5000

What will be returned if we enter the following code into a query for the above database table?

**Code:** Category < > Decorative, Sales >14000

**Result:** Gardenia and Supercem

## Question 8



Fill in the 6 squares above with the correct symbols (1 or ∞) (3 marks)

## Question 9

Table1 : Table			
	Field Name	Data Type	
	ID	AutoNumber	Unique identification
	Video Name	Text	
	Rating	Yes/No	Personal rating out of 10
	Description	Text	500 word description of the video

What is wrong with the database design show above? (1 mark)

Rating is set to Yes/No should be Number

Description is set to Text. Text will not allow for 500 words, should be set to Memo.



**Question 10 \*optional**

	A	B	C	D	E	F	G	H
1		Grade	Score					
2	Tom	B+	83			0	F	
3	Dick	B	80			50	D	
4	Harry	A	91			65	C-	
5	Lisa	A	90			69	C	
6	Murry	C-	66			73	C+	
7	Manjet	B	81			77	B-	
8	Flub	B+	86			80	B	
9	Squimby	B	82			83	B+	
10	Stella	C+	76			87	A-	
11						90	A	
12						97	A+	
13								
14								
15								
16								

A formula has been used to figure out the student's Grade based on their Score and the Grade table to the left.

What is the formula in cell B2? (2 marks)

`=vlookup(c2,$F$2:$G$12, 2)`

Before filling down this formula to from B2 to B10 what would you have to do to the formula? Explain why you would have to do this? (2 marks)

You would have to add \$ to the range F2:G12. This would make the range an absolute reference and prevent it from changing when you fill down.

**Question 11**

You are designing a web page for senior citizens to keep track of their family history. How would the characteristics of this audience influence the content of site. Give an example in your answer.

Senior citizens would like more text content not as many bright colours and pictures as a younger audience.

2 marks

**Question 12**

Swinburne uses the following page to inform prospective students of their course offerings in their Faculty of ICT.



- a. Select one formatting feature of the web page and explain how it adds to the clarity of the information.

Feature - **Bold headings**

Explanation – Lets users easily differentiate between the different sections.

2 marks

- b. Identify two conventions and explain how each adds to the usability of the information product.

Convention 1 – **Use of a consistent navigation bar**

Explanation – This means user can easily navigate through the site as each page uses the same convention.

Convention 2 – **Red links**

Explanation – Red hyperlinks as a convention lets user easily recognise which words link off to somewhere else.

4 marks

**Question 13**

There is an accidental release of a potentially lethal biological chemical at a Government manufacturing plant. There is a fear that some of the chemical has seeped into the water supply for the surrounding suburb. You work for the Government and they have told you not to let anyone know about the release until it is confirmed to have entered the water supply as it will cause undue panic.

You need to make a decision whether to tell the media about the release or not. You have three contacts you can call in order to help you with the ethical dilemma you are now having. Write a question you could ask each of the three contacts to help you with your ethical dilemma. Remember the clock is ticking! (Anyone watch 24?)

a. Scientist testing the water

How long will it take to test the water? What do you think the likelihood of the water being contaminated is? What do you think the effect on the population would be if it is released?

b. Media contact

How long would it take you to inform the public? How would you report the information?

c. Government Hazardous Materials disposal team captain

If the tests come back positive how long would it take you to shut down and dispose of the material?

3 marks

**Question 14**

CTU (Counter Top Unit) sells miscellaneous items that are sold from the counter in convenience stores and service stations. Fred has created a Category and a Product table for stock records:

Category Table

Category Name (primary key)	Category Description
Music	Music CDs
DVD	Movie DVDs
Confectionary	Chocolates and Gummy
Toys	Small toys such as cars and figurines
Magazines	Range of magazines

Product Table

ProductID (primary key)	Product Name	Category Name	Unit Price \$	Quantity in Stock
mus001	Sting Live	Music	\$15.00	15
dvd001	Sin City	DVD	\$20.00	8
mus002	The Music	Music	\$15.50	7
conf001	Gummy Hat	Confectionary	\$4.50	21
conf002	Gummy Shoes	Confectionary	\$4.00	25

- a. Recommend and justify a choice for the **ProductID** field. Justify your answer. ProductID would have to be of type text. This is because the field contains both meaningful text and a number.

2marks

- b. A query is being designed to show all confectionary or items below \$16. Write the rule for the query to filter out the unwanted records.

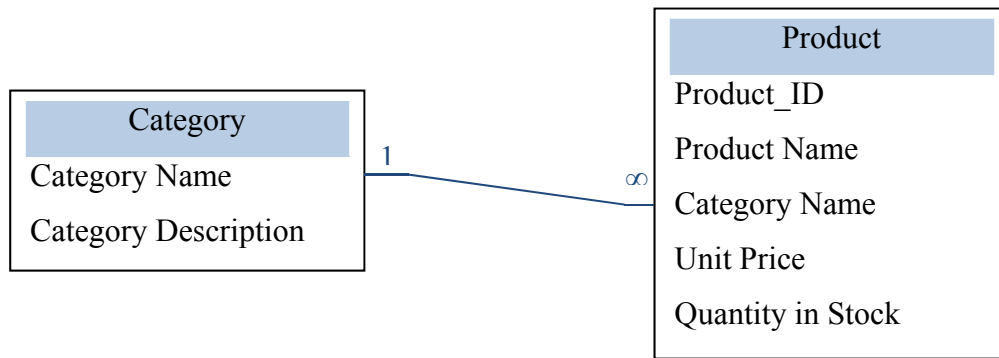
Category Name = "Confectionary" OR Unit Price < 16

1 mark

- c. A rule is written to ensure that when the "Quantity in Stock" field is entered the number must be between 1 and 10 000. How does this rule help enhance the quality of the information in the database.  
This enhances the quality of the information as it will give users a plain text response when they have made an error and how to fix it as opposed to a random error message coming up. This ensures the information in the database is valid and so increases the overall quality of the information in the database.

2 marks

- d. Label with correct symbols the type of relationship that would exist between the two tables.



3 marks

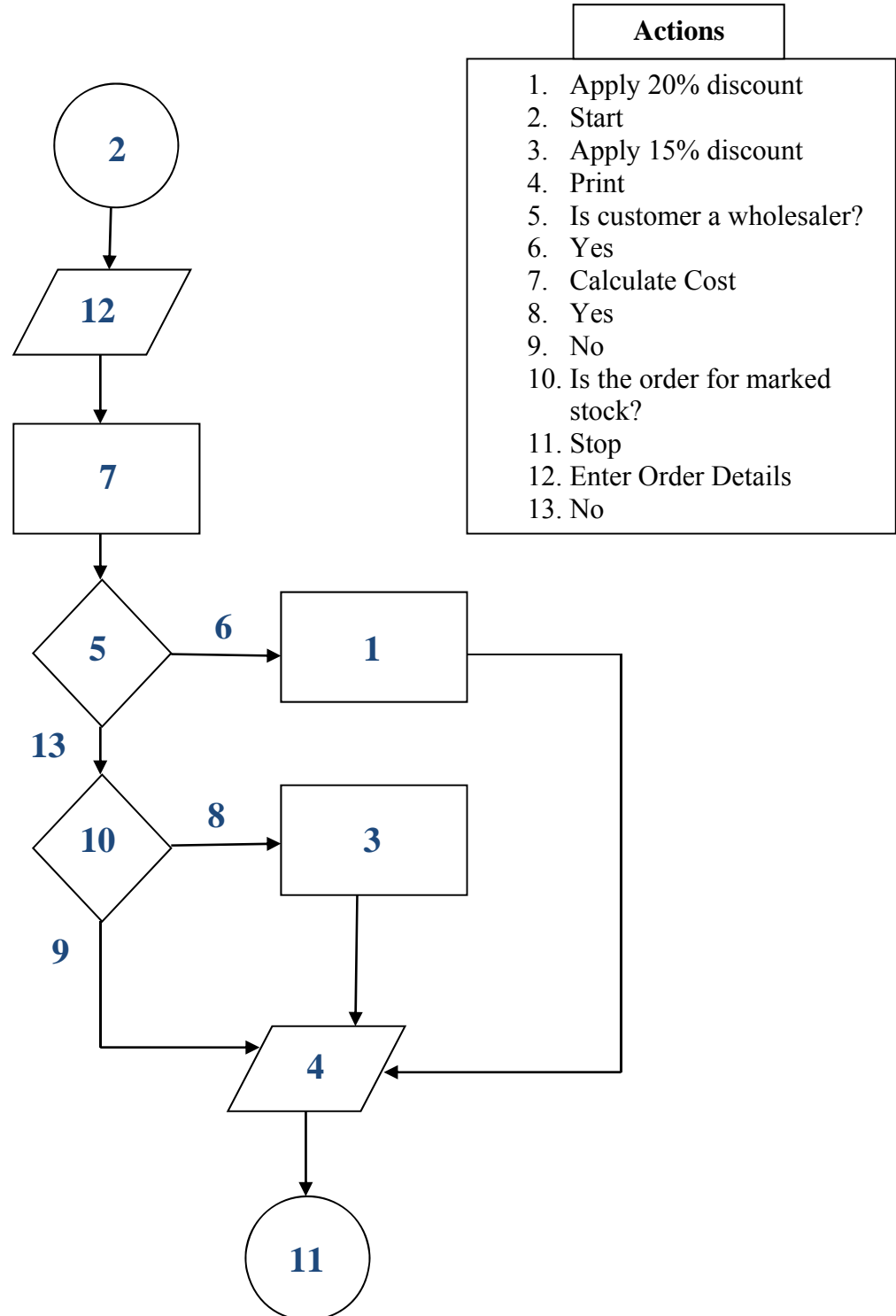
- e. Explain what type of relationship you chose and why you chose it.  
One to many. One Category to many products. This was chosen as logically a single product can have many products associated with it, but not vice versa.

2 marks

**Question 15**

Jack runs a mattress warehouses where he sells direct to public and wholesalers. Wholesalers get a 20% discount on all stock. The public get a 15% discount on marked stock.

Place the corresponding number to the correct location in the flowchart shown below:



**Question 16**

- a. Fred uses the following table to record details of hockey games he manages. Explain the process of setting the following table to third normal form. Explain why it is important for RDBMS tables to be normalised.

Person	Address	Game/Position
Fred Smith	83 Tree Street, Coburg, VIC 3234	Rnd 3, Full Back
Rob Bogong	73 Bush Ave, Fitzroy, VIC, 3456	Rnd 4, Goalie
Scott Sellman	1 Arbor Crt, Moonee Ponds, 3427	Rnd 3, Center
John Navarron	45 Souter Way, Essendon, 3245	Rnd 4, Wing

To turn this table into third normal form first I would separate all the fields. First Name and Surname need to be separated. Address, Suburb, State and Postcode need to be separated and finally Game/Position would need to be separated. Next I would start to separate the data into two tables: Game Details and Player Details. These would need to be separated. Finally I would create a primary key for each table and ensure all data in each table did relate back to the primary key entirely. Normalising tables ensures your database runs efficiently; it also more importantly prevents data redundancies and ensures data integrity.

8 marks

- b. If I was to create an entity relationship diagram (ERD) of the table above, what would my “attributes” be? Justify your selection.  
The attributes would be the fields such as First Name and surname. This is the correct choice as they are the attributes of each table such as Player Details and game details.

3 marks

- c. Fred would like to use a web form to enter details into this database, state two advantages and two disadvantages of using a web form for this.

**Advantages**

Access from anywhere any time.

Can use some good electronic data validations for example range checks on date of birth.

**Disadvantages**

Security issues, you leave yourself more open to attacks and hackers

You are reliant on the Internet.

Users can still enter fake data.

4 marks

- d. Fred would like to employ a cloud service to store the back-end of the database. State two advantages and two disadvantages for doing this.

**Advantages**

Cost Savings, no longer have to have your own server.

Expertise savings, no longer have to manage the server

Offsite backup, in case of natural disaster

**Disadvantages**

Reliant on a good Internet connection

Security issues – the location is not physically secured by you and all information is in danger of being intercepted.

4 marks